

U. S. DEPARTMENT OF COMMERCE

JESSE H. JONES, Secretary

NATIONAL BUREAU OF STANDARDS

LYMAN J. BRIGGS, Director

National Bureau of Standards

AUG 29 1941

LEAD PIPE

Reference book not to be
taken from library.

COMMERCIAL STANDARD CS95-41

Effective Date, June 25, 1941



**A RECORDED VOLUNTARY STANDARD
OF THE TRADE**

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1941

PROMULGATION
of
COMMERCIAL STANDARD CS95-41
for
LEAD PIPE

On September 26, 1940, the Lead Industries Association proposed the establishment of a Commercial Standard for lead pipe, and submitted a specification which the Association has used as a basis for its seal of approval. This specification was submitted to a number of leading distributor and user organizations for comment and was later adjusted to suit the composite recommendations of those concerned. In the absence of need for a general conference, the recommended standard was circulated on April 23, 1941, to manufacturers, distributors, and users for written approval. The trade has since accepted and approved for promulgation by the United States Department of Commerce, through the National Bureau of Standards, the standard as shown herein.

The standard is effective from June 25, 1941.

Promulgation recommended.

I. J. Fairchild,
Chief, Division of Trade Standards.

Promulgated.

Lyman J. Briggs,
Director, National Bureau of Standards.

Promulgation approved.

Jesse H. Jones,
Secretary of Commerce.

LEAD PIPE

COMMERCIAL STANDARD CS95-41

PURPOSE

1. The purpose of this commercial standard is to provide a nationally recognized specification for lead pipe for plumbing and water distribution, which shall serve to promote a better understanding between buyer and seller, and to provide a basis for labeling as advance assurance of acceptable composition, construction, and workmanship.

SCOPE

2. This standard covers chemical composition, inside and outside diameters, weight classification, weight per foot, defects, certification and labeling of one grade of lead pipe. Maximum working pressures are included in table 1 to assist in the selection of the proper classification of lead pipe for various purposes.

REQUIREMENTS

3. *Composition.*—The lead pipe shall contain not less than 99.7 percent of lead. The zinc content shall not exceed 0.002 percent.

4. *Dimensional tolerances.*—The wall thickness shall vary not more than 0.008 inch under, or 0.012-inch over, the specified wall thickness taken at any point on the circumference of the pipe. Wall thicknesses and minimum outside circumferences are given in table 1. Minimum outside circumference shall be measured to the nearest $\frac{1}{16}$ -inch with a steel tape.

TABLE 1.—Lead pipe sizes

Size	Classification		Maximum working pres- sure	Outside diameter	Minimum outside circumfer- ence	Wall thick- ness	Nominal weight per foot
Nominal inside di- ameter (inches)	East ¹	West ²					
$\frac{3}{8}$	(D.....	XL.....	Waste.....	0.549	1 $\frac{9}{16}$	0.087	0.62
	C.....	L.....	do.....	.577	1 $\frac{11}{16}$	.101	.75
	B.....	M.....	do.....	.631	1 $\frac{3}{4}$	.128	1.00
	A.....	S.....	50.....	.725	2 $\frac{1}{8}$	.175	1.50
	AA.....	XS.....	75.....	.811	2 $\frac{3}{8}$	.218	2.00
	AAA.....	XXS.....	100.....	.888	2 $\frac{3}{4}$	.256	2.50
	$\frac{1}{2}$	(D.....	XL.....	Waste.....	.666	1 $\frac{1}{2}$.083	.75
C.....		L.....	do.....	.712	2 $\frac{1}{8}$	.106	1.00
B.....		M.....	do.....	.756	2 $\frac{1}{4}$	.128	1.25
A.....		S.....	50.....	.798	2 $\frac{3}{8}$	.149	1.50
AA.....		XS.....	75.....	.876	2 $\frac{3}{4}$	.188	2.00
AAA.....		XXS.....	100.....	1.012	3 $\frac{1}{16}$	.256	3.00

¹ Symbols used generally for lead pipe sold in cities east of the Illinois-Indiana line.

² Symbols used generally for lead pipe sold in cities west of the Illinois-Indiana line.

TABLE 1.—Lead pipe sizes—Continued

Size		Classification		Maximum working pres- sure	Outside diameter	Minimum outside circumfer- ence	Wall thick- ness	Nominal weight per foot
Nominal inside di- ameter (inches)		East	West					
				<i>lb/in.</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Pounds</i>
5/8		D	XL	Waste	0.803	2 3/4	0.089	1.00
		C	L	do	.881	2 5/8	.128	1.50
		B	M	do	.953	2 7/8	.164	2.00
		A	S	50	1.019	3 1/16	.197	2.50
		AA	XS	75	1.082	3 1/4	.228	3.00
		AAA	XXS	100	1.137	3 7/16	.256	3.50
3/4		D	XL	Waste	.940	2 13/16	.095	1.25
		C	L	do	1.006	3	.128	1.75
		B	M	do	1.068	3 3/16	.159	2.25
		A	S	50	1.156	3 5/8	.203	3.00
		AA	XS	75	1.212	3 11/16	.231	3.50
		AAA	XXS	100	1.336	4 1/16	.293	4.75
1		D	XL	Waste	1.232	3 3/4	.116	2.00
		C	L	do	1.284	3 7/8	.142	2.50
		B	M	do	1.356	4 1/8	.178	3.25
		A	S	50	1.428	4 5/16	.214	4.00
		AA	XS	75	1.492	4 9/16	.246	4.75
		AAA	XXS	100	1.596	4 7/8	.298	6.00
1 1/4		D	XL	Waste	1.486	4 1/2	.118	2.50
		C	L	do	1.528	4 11/16	.139	3.00
		B	M	do	1.592	4 5/8	.171	3.75
		A	S	50	1.670	5 1/8	.210	4.75
		AA	XS	75	1.765	5 5/8	.258	6.00
		AAA	XXS	100	1.889	5 13/16	.320	7.75
1 1/2		D	XL	Waste	1.776	5 7/16	.138	3.50
		C	L	do	1.830	5 5/8	.165	4.25
		B	M	do	1.882	5 3/4	.191	5.00
		A	S	50	1.984	6 1/16	.242	6.50
		AA	XS	75	2.076	6 3/8	.288	8.00
		AAA	XXS	100	2.272	7	.386	11.25
1 3/4		D	XL	Waste	2.024	6 3/16	.137	4.00
		C	L	do	2.086	6 7/16	.168	5.00
		B	M	do	2.146	6 5/8	.198	6.00
		A	S	50	2.193	6 3/4	.222	6.75
		AA	XS	75	2.404	7 7/16	.327	10.50
		AAA	XXS	100	2.624	8 1/8	.437	14.75
2		D	XL	Waste	2.284	7 1/16	.142	4.75
		C	L	do	2.354	7 1/4	.177	6.00
		B	M	do	2.410	7 7/16	.205	7.00
		A	S	50	2.503	7 3/4	.252	8.75
		AA	XS	75	2.751	8 1/2	.376	13.75
		AAA	XXS	100	3.008	9 9/16	.504	19.50
2 1/2	Classified by nominal weight per foot, or by wall thickness.				2.75	8 1/2	.125	5.00
3					3.00	9 9/16	.250	10.62
					3.25	10 1/16	.125	6.00
					3.50	10 3/8	.250	12.50
4					4.25	13 3/16	.125	7.88
					4.50	14	.250	16.38
5					5.25	16 3/8	.125	9.88
					5.50	17 1/8	.250	20.25
6					6.25	19 1/2	.125	11.81
					6.50	20 1/4	.250	24.12

5. *Lengths.*—Pipe 2 inches in diameter and larger is furnished in 10-foot lengths. Pipe smaller than 2 inches is furnished in coils. Coils not exceeding 200 pounds are recommended for convenience in handling, but longer coils may be specified.

6. *Defects.*—Reasonable diligence shall be used in manufacturing operations to eliminate all defects¹ in lead pipe, such as laminations, cold joints, pits, pressure joints, obstructions, and inclusions.

CERTIFICATION AND LABELING

7. The manufacturer's name, registered trade-mark, or identification mark registered with the Lead Industries Association shall be stamped at least once every 24 inches along all pipe. The symbol for wall thickness and the inside diameter shall be stamped at least once on every coil of lead pipe, except sizes 2½ inches and larger, which shall have the nominal weight per foot and inside diameter stamped on each length.

8. It is recommended that the following form of certification be used on labels, tags, invoices, etc.:

The ----- Company certifies that this lead pipe conforms to all the requirements of Commercial Standard CS95-41 as issued by the National Bureau of Standards of the U. S. Department of Commerce.

9. The Lead Industries Association, 420 Lexington Ave., New York, N. Y., has a plan whereby it authorizes manufacturers to use the Association's seal of approval on lead pipe conforming to the Association's standard, which is currently identical in substance with this commercial standard, the seal being mandatory for conformance with the Association's standard. The seal is illustrated in figure 1.



FIGURE 1.—*Seal of approval of the Lead Industries Association.*

EFFECTIVE DATE

The standard is effective from June 25, 1941.

STANDING COMMITTEE

The following individuals comprise the membership of the standing committee, which is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Each organization nominated its own representatives. Comment concerning the standard and suggestions for revision may be addressed to any member of the committee, or to the Division of Trade Standards, National Bureau of Standards, which acts as secretary for the committee.

¹ Cold joints and pressure joints are joints made in the extrusion press by pressure, with or without the aid of heat. Inclusions are substances such as air, gas, dross, oxide, metallic or nonmetallic impurities enclosed in the lead

Chairman:

ALFRED P. KNAPP, American Smelting & Refining Co., 120 Broadway, New York, N. Y.

Producers:

CHARLES A. GEATTY, National Lead Co., 111 Broadway, New York, N. Y.
WILLIAM F. MURDOCK, Eagle-Picher Sales Co., 435 Reading Road, Cincinnati, Ohio.

OSCAR E. PLANTEROTH, Marks Lissberger & Son, Inc., 23-01 Borden Ave., Long Island City, N. Y.

Distributors:

American Institute of Wholesale Plumbing & Heating Supply Associations, 43 E. State St., Battle Creek, Mich. Invited to name representative.

Central Supply Association, 228 N. LaSalle St., Chicago, Ill. Invited to name representative.

Montgomery Ward & Co., Chicago, Ill. Invited to name representative.

Users:

R. S. JONES, Federal Housing Administration, Washington, D. C.

J. W. NICHOLSON, City Purchasing Agent, Milwaukee, Wis. Representing National Association of Purchasing Agents.

National Association of Master Plumbers, 917 15th St. NW., Washington, D. C. Invited to name representative.

HISTORY OF PROJECT

On September 26, 1940, the Lead Industries Association requested the establishment of a Commercial Standard for lead pipe and submitted as a basis for such a standard, a specification developed by the Association and used by it in authorizing the use of the Association's seal of approval on lead pipe manufactured in conformance with the specification.

Because the specification was well known to a large part of the trade, no public hearing for adjustment was believed necessary, but copies of the specification were submitted to approximately 300 interested producers, distributor, and user organizations for comment on December 4, 1940. Following suitable adjustment and unqualified endorsement by a number of those organizations, and in the absence of objection, the recommended Commercial Standard was submitted to the entire trade for written acceptance on April 23, 1941.

On June 10, 1941, the National Bureau of Standards announced that acceptances representing a satisfactory volume of business had been received, and that the standard would become effective from June 25, 1941.

Date _____

Gentlemen:

Production ¹ of lead pipe.	Distribution ¹	Use ¹
100	100	100

Signature of individual officer _____ (in ink)

(Kindly typewrite or print the following lines)

Name and title of above officer _____

Organization _____
(Fill in exactly as it should be listed)

Street address _____

City and State _____

¹ Please designate which group you represent by drawing lines through the other two. Please file separate acceptances for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interests, trade papers, colleges, etc., desiring to record their general approval, the words "in principle" should be added after the signature.

TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. *Enforcement.*—Commercial standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices and the like.

2. *The acceptor's responsibility.*—The purpose of commercial standards is to establish for specific commodities, nationally recognized grades or consumer criteria and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the commercial standard where practicable, in the production, distribution, or consumption of the article in question.

3. *The Department's responsibility.*—The major function performed by the Department of Commerce in the voluntary establishment of commercial standards on a Nation-wide basis is fourfold: first, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. *Announcement and promulgation.*—When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active, valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.

ACCEPTORS

The organizations and individuals listed below have accepted this specification as their standard of practice in the production, distribution, and use of lead pipe. Such endorsement does not signify that they may not find it necessary to deviate from the standard, nor that producers so listed guarantee all of their products in this field to conform with the requirements of this standard. Therefore, specific evidence of quality certification should be obtained where required.

ASSOCIATIONS

American Association of Engineers,
Chicago, Ill.
Denver Master Plumbers Association,
Committee on Standardization, Den-
ver, Colo.
Lead Industries Association, New York,
N. Y.
Virginia Associated Plumbing & Heating
Contractors, Inc., Richmond, Va.

FIRMS

Adams, Franklin O., Tampa, Fla.
Alpha Metal & Rolling Mills, Inc.,
Brooklyn, N. Y.
Altfilisch, Charles, Decorah, Iowa.
American Radiator & Standard Sanitary
Corporation, Minneapolis, Minn.
American Smelting & Refining Co.,
Federated Metals Division, New
York, N. Y.
American Smelting & Refining Co.,
Lead Products Department, New
York, N. Y.
Anderson Fertilizing Co., Inc., Ander-
son, S. C.
Annand, J. D., Portland, Oreg.
Appleby Bros. & Whittaker Co., Harris-
burg, Pa.
Baker Lead Manufacturing Co., Wor-
cester, Mass.
Balch & Lippert, Madison, Wis.
Beacham & LeGrand, Greenville, S. C.
Beardsley, Wallace P., Auburn, N. Y.
Beeson, Carroll O., Crawfordsville, Ind.
Bickford, Robert Turner, Elmira, N. Y.
Blake, Edgar Ovet, Evanston, Ill.
Blithe, Wesley Leshner, Philadelphia, Pa.
Bogner, Harry, Milwaukee, Wis.
Bond Supply Co., Kalamazoo, Mich.
Bowman Supply & Manufacturing Co.,
Inc., Pittsburgh, Pa.
Bradley Supply Co., Chicago, Ill.
Brainerd, Harry B., New York, N. Y.
(In principle.)
Braman, Dow & Co., Boston, Mass.
Braseth & Houkum, Fargo, N. Dak.

Brazer, Clarence W., New York, N. Y.
Brown, Floyd W., Minneapolis, Minn.
Brown, Louis A., Jr., Charlottesville, Va.
Brust & Brust, Milwaukee, Wis.
Bucky, Fred W., Jr., Jacksonville, Fla.
Buechner & Orth, St. Paul, Minn. (In
principle.)
Buffalo Testing Laboratories, Inc.,
Buffalo, N. Y. (In principle.)
Cambridge Smelting Co., Cambridge,
Mass.
Camlet, J. Thomas, Passaic, N. J.
Candela, R., New York, N. Y.
Canfield Supply Co., Kingston, N. Y.
Cannon & Mullen, Salt Lake City, Utah.
Capitol Supply Co., Lincoln, Nebr.
Carroll, John, Ventnor, N. J.
Central Plumbing Supply Co., The,
Bridgeport, Conn.
Central Vermont Public Service Cor-
poration, Rutland, Vt.
Chesebrough Manufacturing Co., Con-
solidated, New York, N. Y.
Chiaverini, Francis, Providence, R. I.
(In principle.)
Cities Service Oil Co., (Del.), Bartles-
ville, Okla.
Cleveland Lead Co., The, Cleveland,
Ohio.
Coit, E., New York, N. Y.
Cole Supply Co., Geo. H., Troy, N. Y.
Colorado, Public Service Co. of, Elec-
tric Operations, Denver, Colo.
Columbia Pipe & Supply Co., Chicago,
Ill.
Community Public Service Co., Ft.
Worth, Tex.
Conrad & Cummings, Binghamton,
N. Y.
Conrow, H. S., Wichita, Kans.
Conwell & Co., E. L., Philadelphia, Pa.
(In principle.)
Coolidge, Shepley, Bulfinch & Abbott,
Boston, Mass.
Corlett, Will G., Oakland, Calif.
Cotton States Fertilizer Co., Macon,
Ga.
County Seat Plumbing Supply Co.,
Inc., White Plains, N. Y.

- Cram & Ferguson, Boston, Mass.
 Crowell & Lancaster, Bangor, Maine.
 Crown Metal Co., Milwaukee, Wis.
 Dalziel Plumbing Supplies, San Francisco, Calif.
 Danser Manufacturing & Supply Co., The, Weston, W. Va., and Clarksburg, W. Va.
 De Jarnette, Charles Wagner, Des Moines, Iowa.
 Delehanty, Andrew L., Albany, N. Y. (In principle.)
 Detroit, City of, Public Lightning Commission, Detroit, Mich.
 Division Lead Co., Chicago, Ill.
 Dodge, Stephen W., New York, N. Y.
 Dominquez Chemical Co., Compton, Calif.
 Drake, Inc., George H., Buffalo, N. Y.
 Dubuque Supply Co., The R. A., St. Louis, Mo.
 Duffy & Co., Edward W., Detroit, Mich.
 Eagle-Picher Sales Co., The, Cincinnati, Ohio.
 Eastern Plumbing Supply Co., Inc., The, Hartford, Conn.
 Egyptian Supply Co., Inc., Christopher, Ill.
 Eichenlaub, Geo. E., Erie, Pa.
 Eldridge, Charles William, Oswego, N. Y.
 Ellis & Sons, Inc., Sol, Chicago, Ill.
 Englewood Plumbing Supply Co., Inc., Englewood, N. J.
 English, Harold T., Hutchinson, Kans.
 Espedahl, K. S., Columbia, S. C.
 Evans Metal Co., Atlanta, Ga.
 Fall River Steam & Gas Pipe Co., Fall River, Mass.
 Flannagan, Eric G., Henderson, N. C.
 Flemm Lead Co., Inc., The, Long Island City, N. Y.
 Florida, University of, Gainesville, la.
 Foltz & Son, Herbert, Indianapolis, Ind.
 Freeport Plumbing & Heating Engineers Freeport, N. Y.
 Galloup Pipe & Supply Co., Battle Creek, Mich.
 Gardiner Metal Co., Chicago, Ill.
 General Plumbing Supply Corporation, Coney Island, N. Y.
 Glaser Lead Co., Inc., Brooklyn, N. Y.
 Grinnell Co., Inc., Providence, R. I.
 Groeniger, Wm. C., Columbus, Ohio.
 Gulf Oil Corporation, Pittsburgh, Pa.
 Hahn, Stanley W., Silver Spring, Md.
 Hannaford, Frederick T., Gainesville, Fla.
 Hannaford & Sons, Samuel, Cincinnati, Ohio.
 Haralson & Mott, Ft. Smith, Ark.
 Harley & Ellington, Detroit, Mich. (In principle.)
 Harper & West, Boston, Mass.
 Hasness, Carlisle D., Harrisburg, Pa.
 Haxby & Bissell, Minneapolis, Minn.
 Helfensteller, Hirsch & Watson, St. Louis, Mo.
 Herron Co., The James H., Cleveland, Ohio. (In principle.)
 Hess Co., Charles, New York, N. Y.
 Hoefler, Arthur Albert, N. Plainfield, N. J.
 Holsman & Holsman, Chicago, Ill.
 Home Plumbing & Heating Co., Twin Falls, Idaho.
 Hoppe, M. F., Washington, D. C. (In principle.)
 Hughes Heating & Plumbing Co., Minneapolis, Minn.
 Hughes Supply Co., The, Mansfield, Ohio.
 Hunting Co., The, Rochester, N. Y., and Auburn, N. Y.
 Ideal Supply Co., Somerville, Mass.
 Illinois, University of, Department of Architecture, Urbana-Champaign, Ill. (In principle.)
 Jahns Supply Co., Ft. Worth, Tex.
 Joannes, Francis Y., New York, N. Y.
 Johnson Plumbing Co., Texarkana, Ark.
 Johnson, Wallwork & Dukehart, Portland, Oreg.
 Jokol-Coy-Thal, Toledo, Ohio.
 Kaelber, Wm. G., & L. A. Waasdorp, Rochester, N. Y.
 Kahn, Bros., Brooklyn, N. Y.
 Kalispell Mercantile Co., Kalispell, Mont.
 Kansas City Smelting Co., Kansas City, Mo.
 Keich & O'Brien, Warren, Ohio.
 Knapp Supply Co., The, Muncie, Ind.
 Kohler Co., Kohler, Wis. (In principle.)
 Kohn, Robert D., & Chas. Butler, Architects Associated, New York, N. Y.
 Koller Bors. Co., The, Cleveland, Ohio.
 Kyle, Herbert S., Charleston, W. Va.
 Laucks Laboratories, Inc., Seattle, Wash.
 Lawrence, Holford & Allyn, Portland, Oreg.
 Lebanon Plumbing Supply Co., Inc., Lebanon, Pa.
 Levy, Will, St. Louis, Mo.
 Lissberger & Son, Inc., Marks, Long Island City, N. Y.
 Main Supply Co., The, Cincinnati, Ohio.
 Maine, University of, Department of Chemistry & Chemical Engineering, Orono, Maine. (In principle.)
 Malone Plumbing Supply Co., S. S. Pittsburgh, Pa.
 Mann & Co., Hutchinson, Kans. (In principle.)
 Martin & Son, A. Oscar, Doylestown, Pa.
 Massena & duPont, Wilmington, Del.

- Mauran, Russell, Crowell & Mullgardt, St. Louis, Mo.
 Messer Co., James A., Washington, D. C.
 Meyer, Gerber Plumbing & Heating Supply Co., Chicago, Ill.
 Mid-West Supply Co., Chicago, Ill.
 Miller & Yeager, Terre Haute, Ind.
 Milwaukee Water Works, Milwaukee, Wis.
 Milwaukee Lead Works, Milwaukee, Wis.
 Mineola Plumbing Supply Co., Inc., Mineola, N. Y.
 Mission Pipe & Supply Co., San Diego, Calif.
 Mitchell, Charles J., Providence, R. I.
 Molther, F. R., Ancon, Canal Zone.
 Montgomery Ward & Co., Chicago, Ill.
 Muhlenberg Bros., Reading, Pa.
 Mundie, Jensen, Bourke & Havens, Chicago, Ill.
 Murdock Manufacturing & Supply Co., The, Cincinnati, Ohio.
 Murphy, Inc., J. L., New York, N. Y.
 Murray, Earl O., Birmingham, Ala.
 National Lead Co., New York, N. Y.
 Nelson Co., N. O., St. Louis, Mo.
 Neptune Supply Corporation, Atlantic City, N. J.
 New Jersey Engineering & Supply Co., Passaic, N. J.
 New Mexico State College of A-M. A., State College, N. Mex. (In principle.)
 Nichols, Edward J., Madison, Nebr.
 North American Smelting Co., Inc., Philadelphia, Pa.
 North Side Plumbing & Heating, Indianapolis, Ind.
 Northern Indiana Supply Co., Inc., Kokomo, Ind.
 Northwest Lead Co., Seattle, Wash.
 O'Rourke Plumbing & Heating Co., W. R., Walla-Walla-Wash.
 Pancoast, Russell T., Miami Beach, Fla.
 Penn Reading Supply Co., Reading, Pa.
 Penniman & Browne, Baltimore, Md.
 Pepper, Geo. W., Jr., Philadelphia, Pa.
 Philadelphia Electric Co., Philadelphia, Pa.
 Pitkin, Inc., Lucius, New York, N. Y. (In principle.)
 Plumbing Wholesale Co., Jackson, Miss.
 Proudfoot Rawson—Brooks & Borg, Des Moines, Iowa.
 Public Service Electric & Gas Co., Newark, N. J.
 Raffel's Plumbing & Heating Supply House, Chicago, Ill.
 Rayl Co., Detroit, Mich.
 Reese & Co., Reading, Pa.
 Ritchie & Associates, James H., Boston, Mass.
 Rochester Lead Works, Inc., Rochester, N. Y.
 Rockford Plumbing Supply Co., Rockford, Ill.
 Rom Co., The Robert, Milwaukee, Wis.
 Ross-Willoughby Co., The, Columbus, Ohio.
 Sales & Co., Murray W., Detroit, Mich.
 Schoeppe, Edward, Philadelphia, Pa.
 Schulzke, William H., Moline, Ill.
 Sears, Roebuck & Co., Chicago, Ill.
 Seashore Supply Co., Atlantic City, N. J.
 Sidells, Arthur F., & Ellis M. Keppel, Warren, Ohio.
 Sleeper, Harold R., New York, N. Y.
 Smith, Emery & Co., San Francisco, Calif.
 Smolka Co., Inc., New York, N. Y.
 Southern California Edison Co., Ltd., Los Angeles, Calif.
 Southern California Telephone Co., Los Angeles, Calif.
 Specification Record, Chicago, Ill.
 Standard Plumbing Supply Co., Inc., Minneapolis, Minn.
 State Plumbing Supply Co., Philadelphia, Pa.
 Staten Island Edison Corporation, St. George, Staten Island, N. Y.
 Staten Island Supply Co., Inc., West New Brighton, S. I., N. Y.
 Staub, John F., Houston, Tex.
 Stauffer Chemical Co., Los Angeles, Calif.
 Steinmann, Robert, Cincinnati, Ohio.
 Summers Hardware & Supply Co., Johnson City, Tenn.
 Sun Oil Co., Philadelphia, Pa., and Marcus Hook, Pa.
 Tallman Co., University City, Mo.
 Taylor, Ellery K., Haddonfield, N. J.
 Taylor & Wheeler, Fresno, Calif.
 Tennessee Copper Co., Copperhill, Tenn.
 Thorne, Henry Calder, Ithaca, N. Y.
 Thornley Supply Co., The, Pawtucket, R. I.
 Tote Supply Co., E. W., Winona, Minn.
 Twining Laboratories, The, Fresno, Calif.
 Van Denberg Supply Co., Rockford, Ill.
 Victory White Metal Co., The, Cleveland, Ohio.
 Vogel, Willis A., Toledo, Ohio.
 Vogel & Sons Co., P. A., Louisville, Ky.
 Wanner Bros., Baltimore, Md.
 Warren Balderston C., Trenton, N. J.
 Warren Plumbers Supply Co., Inc., Jersey City, N. J.
 Weber & Co., Inc., C. L., Philadelphia, Pa.
 Weil-McLain Co., Chicago, Ill.
 Welch, Carroll E., Huntington, N. Y.
 Wensley Metal Products Co., Denver, Colo.
 Westchester Square Plumbing Supply Co., Inc., New York, N. Y.
 Whitaker, Courtney L., Dravosburg, Pa.

Wischmeyer, William F., St. Louis, Mo.	Zimmerman, A. C., Pasadena, Calif.
Wisconsin Electric Power Co., Milwaukee, Wis.	
Wood & Son, E. J., Clarksburg, W. Va.	U. S. GOVERNMENT
Woolcock Plumbing & Heating Co., Niagara Falls, N. Y.	Agriculture, Department of, Washington, D. C.
Worthington Co., The Geo., Cleveland, Ohio.	Federal Loan Agency, Federal Housing Administration, Washington, D. C.
Wright & Wright, Detroit, Mich. (In principle.)	Guam, Government of, Guam.
Yelton-Weaver Supply Co., Springfield, Ill.	Treasury Department, Washington, D. C.
Young Gasoline & Refining Co., The, Lexington, Ky. (In principle.)	Veterans Administration, Washington, D. C.
	War Department, Washington, D. C.

COMMERCIAL STANDARDS

CS No.	Item	CS No.	Item
0-40.	Commercial standards and their value to business (third edition).	52-35.	Mohair pile fabrics (100-percent mohair plain velvets, 100-percent mohair plain frieze, and 50-percent mohair plain frieze).
1-32.	Clinical thermometers (second edition).	53-35.	Colors and finishes for cast stone.
2-30.	Mopsticks.	54-35.	Mattresses for hospitals.
3-40.	Stoddard solvent (third edition).	55-35.	Mattresses for institutions.
4-29.	Staple porcelain (all-clay) plumbing fixtures.	56-41.	Oak flooring (second edition).
5-40.	Pipe nipples; brass, copper, steel, and wrought iron.	57-40.	Book cloths, buckrams, and impregnated fabrics for bookbinding purposes except library bindings (second edition).
6-31.	Wrought-iron pipe nipples (second edition). Superseded by CS5 40.	58-36.	Woven elastic fabrics for use in overalls (overall elastic webbing).
7-29.	Standard weight malleable iron or steel screwed unions.	59-41.	Woven textile fabrics—testing and reporting (third edition).
8-41.	Gage blanks (third edition).	60-36.	Hardwood dimension lumber.
9-33.	Builders' template hardware (second edition).	61-37.	Wood-slat venetian blinds.
10-29.	Brass pipe nipples. Superseded by CS5-40.	62-38.	Colors for kitchen accessories.
11-41.	Moisture regains of cotton yarns (second edition).	63-38.	Colors for bathroom accessories.
12-40.	Fuel oils (fifth edition).	64-37.	Walnut veneers.
13-39.	Dress patterns (second edition).	65-38.	Wool and part-wool fabrics.
14-39.	Boys' button-on waists, shirts, junior and polo shirts (made from woven fabrics) (second edition).	66-38.	Marking of articles made wholly or in part of platinum.
15-29.	Men's pajamas.	67-38.	Marking articles made of karat gold.
16-29.	Wallpaper.	68-38.	Liquid hypochlorite disinfectant, deodorant, and germicide.
17-42.	Diamond core drill fittings (third edition).	69-38.	Pine oil disinfectant.
18-29.	Hickory golf shafts.	70-41.	Phenolic disinfectant (emulsifying type) (second edition) (published with CS71-41).
19-32.	Foundry patterns of wood (second edition).	71-41.	Phenolic disinfectant (soluble type) (second edition) (published with CS70-41).
20-36.	Staple vitreous china plumbing fixtures (second edition).	72-38.	Household insecticide (liquid spray type).
21-39.	Interchangeable ground-glass joints, stopcocks, and stoppers (fourth edition).	73-38.	Old growth Douglas fir standard stock doors.
22-40.	Builders' hardware (nontemplate) (second edition).	74-39.	Solid hardwood wall paneling.
23-30.	Feldspar.	75-39.	Automatic mechanical draft oil burners designed for domestic installations.
24-30.	Standard screw threads.	76-39.	Hardwood interior trim and molding.
25-30.	Special screw threads.	77-40.	Sanitary cast-iron enameled ware.
26-30.	Aromatic red cedar closet lining.	78-40.	Ground-and-polished lenses for sun glasses (second edition) (published with CS79-40).
27-36.	Mirrors (second edition).	79-40.	Blown, drawn, and dropped lenses for sun glasses (second edition) (published with CS78-40).
28-32.	Cotton fabric tents, tarpaulins, and covers.	80-41.	Electric direction signal systems other than semaphore type for commercial and other vehicles subject to special motor vehicle laws (after market).
29-31.	Staple seats for water-closet bowls.	81-41.	Adverse-weather lamps for vehicles (after market).
30-31.	Colors for sanitary ware.	82-41.	Inner-controlled spotlamps for vehicles (after market).
31-38.	Wood shingles (fourth edition).	83-41.	Clearance, marker, and identification lamps for vehicles (after market).
32-31.	Cotton cloth for rubber and pyroxylin coating.	84-41.	Electric tail lamps for vehicles (after market).
33-32.	Knit underwear (exclusive of rayon).	85-41.	Electric license-plate lamps for vehicles (after market).
34-31.	Bag, case, and strap leather.	86-41.	Electric stop lamps for vehicles (after market).
35-31.	Plywood (hardwood and eastern red cedar).	87-41.	Red electric warning lanterns.
36-33.	Fourdrinier wire cloth (second edition).	88-41.	Liquid-burning flares.
37-31.	Steel bone plates and screws.	89-40.	Hardwood stair treads and risers.
38-32.	Hospital rubber sheeting.	90- .	(Reserved for power shovels and cranes).
39-37.	Wool and part wool blankets (second edition). (Withdrawn as commercial standard, July 14, 1941.)	91-41.	Factory-fitted Douglas fir entrance doors.
40-32.	Surgeons' rubber gloves.	92-41.	Cedar, cypress and redwood tank stock lumber.
41-32.	Surgeons' latex gloves.	93-41.	Portable electric drills (exclusive of high frequency).
42-35.	Fiber insulating board (second edition).	94-41.	Calking lead.
43-32.	Grading of sulphonated oils.	95-41.	Lead pipe.
44-32.	Apple wraps.	96-41.	Lead traps and bends.
45-40.	Douglas fir plywood (domestic grades) (fourth edition).		
46-40.	Hosiery lengths and sizes (third edition).		
47-34.	Marking of gold-filled and rolled-gold-plate articles other than watch cases.		
48-40.	Domestic burners for Pennsylvania anthracite (underfeed type) (second edition).		
49-34.	Chip board, laminated chip board, and miscellaneous boards for bookbinding purposes.		
50-34.	Binders board for bookbinding and other purposes.		
51-35.	Marking articles made of silver in combination with gold.		

NOTICE.—Those interested in commercial standards with a view toward accepting them as a basis of everyday practice may secure copies of the above standards, while the supply lasts, by addressing the Division of Trade Standards, National Bureau of Standards, Washington, D. C.

